has been appointed Naturalist to the Marine Biological Association, Plymouth.

The Drapers' Company have asked Mr. Jackson, the University architect, to inquire whether, for the sum of 15,000*l.*, a new building can be erected to accommodate the Radcliffe (Scientific) Library.

Before the end of the present term an election will be made to the Oxford Biological Scholarship at Naples. Candidates must be graduates of the University, and are requested to send their names to the Linacre Professor of Comparative Anatomy at the University Museum before the end of May.

An examination for Scholarship and Exhibition is announced to take place at Wadham College on December 6. No papers in Natural Science will be set, but in the election to one of the Exhibitions preference will be given to any candidate who shall undertake to read for honours in Natural Science, and to proceed to a Degree in Medicine.

CAMBRIDGE.—The Grace for confirming the resolution of the Syndicate on titular degrees for women was rejected by 1707 votes to 661. The opposition of the majority of the residents has thus been unmistakably endorsed by the non-resident members of the Senate. It is probable that the question of admitting women to the membership of the University, whether by stages or directly, will not again be raised. The suggestion that powers should be obtained enabling the women's colleges to confer degrees on their own students will now have a better chance of calm consideration. The University might long continue to teach and examine the women students, while the titles which have been sought by them as necessary for their professional success might in this way be acquired without endangering the peace of Cambridge as a place of education for men.

Prof. Rücker, Sec.R.S., will give the Rede Lecture on "Terrestrial Magnetism," in the Senate House, on Wednesday, June 9, at noon.

The General Board of Studies propose to establish a University Lectureship in Experimental Psychology, including the physiology of the senses, at a stipend of 50*l.* a year. The appointment will probably be made next month.

Prof. Hughes, F.R.S., and Mr. P. Lake, of St. John's College, are appointed to represent the University at the International Geological Congress to be held at St. Petersburg in the summer.

FIELD-MARSHAL SIR JOHN LINTORN SIMMONS, G.C.B., will distribute the prizes to the students of the Charing Cross Hospital Medical School, on Wednesday, June 2, at 4 o'clock.

MRS. JOSIAH M. FISKE has given to Barnard College, of New York City, one hundred and forty thousand dollars for a new dormitory. Other gifts of considerable aggregate value have also been recently received by the college. Gifts are constantly pouring in on Columbia University; and the new buildings for these two institutions are rapidly rising on the new site on Morningside Heights.

THE following are among recent appointments:—Dr. E. Fischer to be full Professor of Botany in the University of Berne, and Director of the Botanical Gardens there; Dr. G. Jäger to be Assistant Professor of Theoretical Physics in the University of Vienna; Dr. F. Gräfe to be Assistant Professor of Mathematics in the Polytechnic Institute at Darmstadt; Dr. F. Deichmüller, Privat-docent in Astronomy and Observer in the Bonn Observatory, to be Assistant Professor.

THE Lords of the Committee of Council on Education are taking steps to ascertain the number of pupils now receiving secondary education in England in endowed, proprietary, and private schools. It is not proposed to include in the return any pupils who are only receiving instruction in occasional classes or evening schools; and technical institutes (except in so far as they have secondary day schools) and University colleges will fall outside the scope of the inquiry.

IN the House of Lords, on Friday, Lord Norton asked the Lord President whether he hoped to be able to introduce a Bill on secondary education this Session; or, if not, early next year. The Duke of Devonshire replied that he did not entertain any hope that Parliament would be asked to deal seriously with the subject in the course of the present Session. He hoped, however, that there would be laid before Parliament a Bill the main proposals of which were contained in the Bill of last year, so far as they related to secondary education, with some amendments and additions, in order that the general views of the Government might be once more placed before the country, and that the country might be in a position to consider them during the vacation.

SCIENTIFIC SERIALS.

THE most important paper in the numbers of the *Journal of Botany* for April-May is the completion of Mr. I. H. Burrill's very interesting notes on the fertilisation of spring-flowering plants on the Yorkshire coast. A series of careful observations are recorded on the species of the insect-visitors and the frequency of their visits.—Welwitsch's African collections are still affording to Messrs. W. and G. S. West a large number of new species of desmids.

IN the *Nuovo Giornale Botanico Italiano* for April are only two short papers on structural botany.—Sig. I. Baldrati describes the peculiar excrescences (*pellule*) found on the bulbs of certain species of *Allium*, which he decides to be of a foliar character.—Sig. E. Matteucci speaks of the structure of the corky spots in leaves, which are of the nature of lenticels.—The remaining papers are descriptive.

THE papers in the numbers of the *Bullettino de la Soc. Botanica Italiana* for February-April are also mostly descriptive.—Sig. G. Mattej discourses on the red spots found on the leaves and petals of a number of plants, and of the gum-resinous substance which they contain.—Sig. L. Macchiati returns to the vexed question of the peculiar structure of the seeds of *Vicia narbonensis*, which he declares to present marked differences from those of allied species.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, April 8.—"Kathode and Lenard Rays." By J. A. McClelland, M.A. Received March 15.

The experiments described in this paper have to do partly with kathode, and partly with Lenard rays.

An arrangement is described by which the charge of electricity carried by the kathode rays can be directly measured, and the same method is then applied to the Lenard rays, which are found to carry a similar negative charge.

In one set of experiments the Lenard rays are examined inside the tube, the kathode rays being allowed to fall upon a screen of thin aluminium, and the charge that is carried by the Lenard rays on the further side of the aluminium measured.

In a second set of experiments, a window of oiled silk is placed in the vacuum tube in the path of the kathode rays, and here, again, the charge carried by the Lenard rays outside the tube can be detected and measured.

It can also be shown that there is a negative discharge from the window by placing a plate of ebonite opposite the window, and dusting it over, after exposure, with minium and sulphur. The well-known negative figure is produced on the plate.

The Lenard rays appear to be simply a secondary propagation of kathode rays, produced by the rapid pulsations of negatively charged particles up to the aluminium screen. Measurements of the amount of electricity carried by these charged particles show that the electrostatic effects produced when they are stopped at the screen are sufficient to produce discharge on the further side of the screen, and a secondary stream of kathode rays. All the observed properties of Lenard rays admit of explanation on the theory that, like the kathode rays, they consist of a stream of charged particles.

In the paper an arrangement is described to measure the portion of the current actually carried by the kathode rays in a vacuum tube. With the tube used, even at a pressure at which there was little phosphorescence, a considerable fraction (more than 1/50) of the whole discharge was carried away from the kathode by the negative rays, while at lower pressures these rays carried a large portion of the discharge.

Chemical Society, April 29.—Prof. Dewar, President, in the chair.—The following papers were read:—On the explosion of chlorine peroxide with carbonic oxide, by H. B. Dixon and E. J. Russell. On exploding a mixture of carbonic oxide and chlorine peroxide, less of the carbonic oxide is burnt as the mixture is the more carefully dried; this result does not favour the view that "nascent" oxygen attacks carbonic oxide more readily than ordinary oxygen.—On the decomposition of iron pyrites, by W. A. Caldecott. The "slime" obtained on crushing auriferous pyritic Witwatersrand conglomerate contains no ferrous sulphide as it leaves the battery, but this substance can be detected in the slime soon after deposition in the dams; ferrous sulphide is also formed when iron pyrites is crushed to an impalpable powder in a mortar. It would thus appear that ferrous sulphide, and not sulphate, is the first decomposition product of pyrites.—Monochlordiparaconic acid and some condensations, by H. C. Myers. Monochlordiparaconic acid, $C_9H_9ClO_2$, is obtained on treating dichlormethylparaconic acid with barium hydroxide.—Corydaline, Part v., by J. J. Dobbie and F. Marsden. On heating corydaline with dilute nitric acid, dehydrocorydaline nitrate $C_{22}H_{25}NO_{41}HNO_3$ is formed, and if the action of the acid be pushed further, corydic acid, $C_{14}H_9N(OMe)_2(COOH)_2$, is obtained; on oxidising this with permanganate, at least four different acids are produced.

May 6.—Prof. Dewar, President, in the chair.—The following papers were read:—A Bunsen burner for acetylene, by A. E. Munby. A modified form of Bunsen burner for use with acetylene is described, which has a much greater heating effect than a Bunsen consuming an equal volume of coal-gas instead of acetylene.—The reactions between lead and the oxides of sulphur, by H. C. Jenkins and E. A. Smith. The authors find that Hannay's hypothetical compound, PbS_2O_2, the formation of which was premised in order to explain the reaction between sulphur dioxide and lead, and between air and galena at high temperatures does not exist. The investigation of other of the reactions of lead salts at high temperatures prove the accuracy of the equations which Dr. Percy gave as the basis of the metallurgy of lead.—X-ray photographs of solid alloys, by C. T. Heycock and F. H. Neville. The authors have applied the fact that some metals, such as sodium and aluminium, are comparatively transparent to X-rays, whilst others, like gold, are opaque, to the investigation of alloys; a thin section is cut from the alloy to be examined, and an X-ray photograph obtained of it. Examined thus, pure sodium shows no crystalline structure, but alloys containing 3–10 per cent. of gold show transparent sodium crystals interspersed with opaque gold crystals. Many other gold-sodium and some aluminium alloys have been examined by this new method.

Entomological Society, May 5.—Mr. Roland Trimen, F.R.S., President, in the chair.—Mr. C. H. Peers was elected a Fellow of the Society.—Mr. J. J. Walker exhibited an earwig, *Apterygida arachidis*, Yersin, new to Britain, and recently found in large numbers in chemical works at Queenborough. It had been probably imported among bones.—Mr. Burr showed a complete series of the British species of Forficulidæ.—Mr. Enock showed eggs of *Stenopsocus cruciatus*, L., containing parasitic larvæ of *Alaptus fusculus*, Hal., the male of which would probably prove to be *Alaptus minimus*, Hal.—Mr. Merrifield exhibited the results of temperature experiments on the pupæ of *Pieris daplidice*, *Melitæa didyma*, and other species. He thought that changes produced by abnormal temperatures might be classed as follows: (1) enhancement or diminution of intensity of colour without alteration in the form of the markings; (2) substitution of scales of a different colour, scattered or in groups; (3) imperfection in the development of scales or their pigment.—Mr. Tutt showed a series of insects collected at Cannes in March, and remarkable for their early emergence.—Dr. Dixey read a paper on mimetic attraction, in which he dealt with the steps by which a wing-pattern, as in South American Pierinæ, could be modified in various directions so as to secure a mimetic result, and with the theories of mimicry put forward by Bates and Fritz Müller.—Mr. Blandford exhibited and discussed series of homœochromatic and mimetic Neotropical species of butterflies, chiefly of Heliconiidæ and Heliconioid Danaidæ. The discussion was continued by Prof. Poulton, who showed similar groups of several genera, remarkable as having been collected and sent to England as examples of a single species, and by the President, and it was ultimately adjourned to June 2.

Geological Society, May 12.—Dr. Henry Hicks, F.R.S., President, in the chair.—The following communications were read:—On the gravels and associated deposits at Newbury (Berks), by E. Percy Richards. After a general sketch of the geology of the Valley of the Kennet, the superficial deposits at and in the neighbourhood of Newbury were described in detail, from observations made by the author during the progress of the main drainage-works in 1894 The author classified the strata which he examined into five groups: (1) The Preglacial Southern Drift; (2) the Glacial Drift (Donnington); (3) the Upper River-gravel; (4) the Lower River-gravel; (5) the Neolithic peat-beds (shell-marl, peat, and loam).—The Mollusca of the Chalk Rock, Part ii., by Henry Woods. The first part of this paper, dealing with the Cephalopoda, Gasteropoda, and Scaphopoda, appeared in the last volume of the *Quarterly Journal* (vol. lii. p. 68). In the new communication the author gave an account of the characters, synonymy, and distribution of the Lamellibranchia: 29 species were recognised, 6 being new. In the concluding part the author compared the fauna of the *Reussianum*-zone (Chalk Rock) in England with that of other European areas, particularly North-West Germany and Saxony. In the latter country the number of species in some groups—particularly Gasteropoda and Lamellibranchia—was much greater than in England; this difference was probably due to the sea having been of less depth than in the English area. It was noticed that the species of Cephalopoda had a much wider geographical distribution than the other groups of the Mollusca. Finally, by a study of the present distribution of the genera—particularly of those which formed the predominating element in the fauna—taken in conjunction with the other characters of the zone, the author arrived at the conclusion that in England the *Reussianum*-zone was probably formed between the depths of 100 and 500 fathoms.

Mathematical Society, May 13.—Prof. Elliott, F.R.S., President, in the chair.—The following communications were made:—On cubic curves as connected with certain triangles in perspective, by S. Roberts, F.R.S.—Determination of certain primes, by F. W. Lawrence.—An analogue of anharmonic ratio, by J. Brill.—An essay on the geometrical calculus (continuation), by E. Lasker.—On the partition of numbers, by G. B. Mathews.—Notes on synthetic geometry, by W. Esson, F.R.S.

Zoological Society, May 18.—Prof. G. B. Howes in the chair.—Mr. Sclater exhibited a plan of the new Zoological Garden attached to the Pará Museum, Brazil, and called attention to the description of it recently published in the "Der Zoologische Garten" by Herr Meerwarth.—Mr. Sclater exhibited the skin of a penguin which he had received in exchange from the Musée d'Histoire Naturelle of Paris as a specimen of *Microdiptes serresianus* (Oust.); and read a note from Mr. Ogilvie-Grant, according to which this specimen was only an immature example of the Rock-hopper penguin (*Eudyptes chrysocome*).—Mr. R. E. Holding exhibited a skull of a Theban goat (*Capra hircus*, var. *thebaica*), and made remarks on the shortening of the skull in this and other domesticated animals.—Mr. G. A. Boulenger, F.R.S., read a paper entitled "A Revision of the Lizards of the Genus *Sceloporus*." From a study of the large mass of material in the British Museum, the author had come to the conclusion that the difficult genus *Sceloporus*, so far as was at present known, consisted of thirty-two species. Nearly all the specimens examined, with the exception of very young ones, had been measured, and their dimensions and the number of scales and femoral pores possessed by each of them were recorded in the paper. One new species (*Sceloporus asper*) was described.—Dr. G. Herbert Fowler read the second of a series of papers on the Plankton of the Faeroe Channel, which dealt with the distribution of *Conchœcia maxima* (a midwater or mesoplankton form), with the European species of *Tomopteris*, and with the distribution of *Tracheloteuthis riisei*.—Mr. Martin Jacoby contributed the second part of a paper on the Phytophagous Coleoptera of Africa and Madagascar. Nine new genera and eighty new species of the families *Eumolpinæ*, *Halticinæ*, and *Galerucinæ* were described.—Mr. W. G. Ridewood read a paper on the structure and development of the hyobranchial skeleton of *Pelodytes punctatus*.—Messrs. Oldfield Thomas and R. Lydekker, F.R.S., contributed a paper on the number of grinding-teeth possessed by the Manatee. From an examination of several specimens of this animal it had been ascertained that the number of its grinding-teeth was not a fixed one, but that it developed a continuous and indefinite number to replace those which had become worn away by the sand which was necessarily present in somewhat large quantities in its food of water-weeds.

Royal Meteorological Society, May 19.—Mr. E. Mawley, President, in the chair.—Mr. F. Gaster, of the Meteorological Office, read a paper by Mr. R. H. Scott, F.R.S., and himself, on the mean monthly temperatures of the British Isles. The authors dealt with the means of the daily minimum, average, and maximum temperatures for the various months of the year in the twenty-five years 1871-95. They pointed out that there is a great difference between the amount of range of temperature at the coast stations and that recorded inland. The range between January and July amounts to about 16° at coast stations, but to more than 23° at the inland stations. The contrast between the temperature of the air at inland stations and at coast stations at different times of the year is due to the following causes: (1) The constant tendency of the sun to heat the surface of the earth; (2) the equally constant tendency of the earth to radiate its heat into space, both of these being modified greatly by the aqueous vapour and the clouds suspended in the atmosphere; (3) the fact that the solid portions of the earth absorb and reflect heat much more rapidly than the water; and (4) that while the ocean to the westward is of enormous size and great depth, the sea to the eastward is, comparatively speaking, limited in area and shallow, and separates the eastern shores of the British Islands from those of continental Europe by a small distance.—A paper, by Mr. C. V. Bellamy, on the rainfall of Dominica, West Indies, was also read. The author gave an interesting account of the climate of the island, and then discussed the monthly returns of rainfall from twenty-seven stations during the four years 1893-96. The rainy season extends from July to November, the other months representing the dry season. The month of November, 1896, was the wettest on record.

PARIS.

Academy of Sciences, May 17.—M. A. Chatin in the chair.—On the photographic atlas of the moon, published by the Observatory of Paris (second part), by MM. Lœwy and Puiseux.—Signification of appendices and their symmetry in the measurement of gradation in vegetable species, by M. Ad. Chatin. Plants are classified into two large groups, according as they have appendices or not. The symmetrical relations between the appendices serve to further subdivide the larger series.—Fourth note on the applications of radioscopy to the diagnosis of diseases of the thorax, by M. Ch. Bouchard. The preceding notes deal with the applications of radioscopy to the diagnosis of pleurisy, pulmonary tuberculosis, and hypertrophy of the heart. In the present note four cases are described: one of cancer of the œsophagus, and three of diseases of the aorta subsequent to acute rheumatism, in all of which the examination by the Röntgen rays proved to be of great service.—Demonstration by the Röntgen rays of the osseous regeneration in man after surgical operations, by M. Ollier. Studies of this nature have hitherto been very difficult, owing to the fact that accidental deaths at suitable stages in the osseous development are necessarily rare. The form and dimensions of the osseous masses in the new formation can now be readily demonstrated by means of the X-rays. The exact knowledge afforded in this way of the position of diseased bone (as in osteo-myelitis), renders unnecessary the immediate amputation of the limb, since the whole of the diseased portions can be removed with precision.—Disturbances in lakes and hurricanes, by M. F. A. Forel. It is shown that sudden barometric changes of the order of magnitude actually registered on one or two occasions are sufficient to account for the extraordinary changes of level occasionally observed on the Lakes Leman and Geneva. The effects are magnified by interference, and by the narrowing down of the lake.—M. Klein was elected a Correspondant of the Academy in the Section of Geometry, in the place of the late Prof. Sylvester.—Converse theory of binomial theorem, by M. Sitanath Chakrabarthy.—On the medicinal properties of *Œnothera biennis*, by M. Lewis Germain.—On the curves of which the tangents belong to a complex, by M. A. Demoulin.—On some applications of the theory of cyclic systems, by M. C. Guichard.—On a graphical method of integration for differential equations, by M. Michel Petrovitch. A mechanical apparatus is described capable of integrating all equations of the form $\Phi(y)\,dy/dt + \lambda\sqrt{y} - af'(t) = 0$, and of certain other equations derived from this by suitable substitutions.—On the kathode rays and some phenomena in vacuum tubes, by M. C. Maltézos. Experiments are described leading to the conclusion that anode light consists of matter carrying positive electricity.—On the transparency of ebonite, by M. Perrigot. Ebonite in thin films (0·5 mm.) is obviously transparent to red light, and light after passing through ebonite produces distinct effects upon orthochromatic plates rendered sensitive to the red and yellow rays. Ebonite plates 2 mm. in thickness, although opaque to the eye, still affect the photographic plate. These results confirm those of M. Becquerel as to the true cause of the effects observed by M. Le Bon.—New determinations of gravity, by M. J. Collet. The results of a series of pendulum observations along the forty-fifth parallel of latitude. The final results are compared with those calculated by Defforges' formula, the experimental results being always slightly lower than the theoretical.—On lithium borate, by M. H. Le Chatelier. The monoborate $LiBO_2$ is readily obtained in the dry way; it dissolves, readily forming the hydrate $LiBO_2 8H_2O$. The solubility curve shows some peculiarities, there being a temperature of maximum solubility. The heats of hydration, solution, and combination were determined. In the wet way, a diborate analogous to borax is formed, but the salt is so soluble that it could not be isolated.—On the alloys of the silver-copper group, by M. F. Osmond. In spite of the fact that the alloy containing the metals in the proportions indicated by Ag_3Cu_2 is the only one that does not liquate on solidifying, the alloy is not a homogeneous compound, but a mixture. The results of Heycock and Neville on the melting points of the copper zinc alloys indicate this, and the micrographical study affords results leading to the same view.—Researches on the coloration of glass by the direct penetration of metals or metallic salts, by M. Léon Lémal. Glass of a suitable composition can be coloured by a process similar to cementation at temperatures between 500° and 550° C. With silver salts a reddish orange stain is produced.—Remarks by M. Armand Gautier on the preceding note.—The action of water upon phosphoryl trichloride, by M. A. Besson. By the action of small quantities of water upon $POCl_3$ at 100°, several chlorides appear to be produced, from which pyrophosphoryl chloride, $P_2O_3Cl_4$, can be isolated and analysed in a fairly pure state. The residue is stated to consist of metaphosphoryl chloride, but no analyses are given, nor any indications that the residue was a homogeneous substance. The action of water is thus shown to be analogous to that of hydrogen sulphide.—On some new symmetrical aromatic ureas, by MM. P. Cazeneuve and Moreau. The authors conclude from their experiments that the best method of preparation of symmetrical substituted ureas is by acting with primary bases upon the carbonic ethers of the phenols, especially upon the carbonate of guiacol.—On the amido-amidines, by M. Charles Lauth.—*Rôle* of tannins in plants, and especially in fruits, by M. C. Gerber. One of the chief functions of tannin appears to be to prevent pectic transformations, and hence to prevent the fermentation of their sugars. In fruits containing tannins, these disappear completely by oxidation without giving rise to any carbohydrates.—On the *Pseudocommis vitis* (Debray), and on new proofs of the existence of these Myxomycetes, by M. E. Roze.—The clear rings ("lunure") in sections of oak wood, by M. Emile Mer.—Physiological disturbances due to the X-rays, by M. Destot. The differences between the effects of exposure to the sun and X-rays are clearly marked, the latter not being felt at the moment of application, and only becoming evident after a considerable time.—Researches on the causes of disturbances due to growth with the aid of the X-rays, by MM. Maurice Springer and D. Serbanesco.—Rule for solving two numerical equations of any degree with two unknowns, by M. Teguor.

ST. LOUIS.

Academy of Science, May 3.—Mr. H. von Schrenk spoke of the respiration of plants, with special reference to the modification of those growing with their roots submerged in water. The lecture was illustrated by a demonstration of the liberation of carbon dioxide in respiration from the roots of an ordinary flowering plant and freshly gathered fungi, and the more usual ærenchyma structures were made clear by the use of lantern slides.—Prof. F. E. Nipher described a simple means of measuring the resistance of a tube to the flow of air, when compared with an accepted standard, by the use of a tubular device, similar in principle to the Wheatstone bridge used in electrical instruments; the apparatus, in the present instance, consisting of parallel tubes filled with air, connected by a tubular bridge, in the middle of which a drop of water was placed, so as to change position with the variations in the flow of air on the one hand or on the other.

AMSTERDAM.

Royal Academy of Sciences, April 21.—Prof. van de Sande Bakhuyzen in the chair.—Prof. Haga communicated a method of determining the wave-length of X-rays. This method, the result of experiments made by Mr. P. G. Tiddens, of Gröningen, is founded upon the fact that a perfectly identical deflection image is produced by rays of very different wave-length, by varying the distance between the source, the diffracting slit, and the screen in a definite manner. Starting from a diffraction image of light rays, provisional experiments were made to determine whether the wave-length of X-rays was equal to, or one-quarter or one-fifteenth of, that of light rays. In the last-mentioned case, the image resembled that obtained from light rays more than the others did; it was not, however, quite identical with it.—Prof. Haga read a paper, by Dr. C. H. Wind, on the influence of the dimensions of the light beams on Fresnel's diffraction phenomena, and on the diffraction of X-rays. From experiments, made by Mr. Tiddens, it appeared that the X-shadow figures obtained by Fomm and others, are not ordinary Fresnel diffraction images. The author showed that the shadow figures obtained are to be conceived as secondary diffraction images (arising from ordinary ones on the slit serving as a source of light being widened), and he developed the main points of the theory of these secondary diffraction images, and pointed out the way it opens to determining the wave-length. The existence of secondary diffraction phenomena, analogous to those observed when employing X-rays, can easily be ascertained when ordinary light is used. This, in the author's opinion, as good as proves the undulatory character of X-rays.—Mr. Hamburger communicated a new quantitative method of determining the anti-bacterial action of blood and tissue fluid. This method avoids the usual counting of microbes with the help of plate cultures, because this occasions errors of 40 to 50 per cent. Instead of counting the microbes, their total volume is determined by centrifugal action. This method occasioned errors of only 6·5 per cent.—Prof. van der Waals presented, for publication in the *Proceedings*, a paper on the equilibrium of a compound solid in the presence of a gas and a liquid. The author proves that by adding to the ψ surface for a mixture (*Arch. Néerl.*, t. xxiv.) a ψ line for the solid, the laws of these phenomena can be deduced in a simple way by geometrical construction.

DIARY OF SOCIETIES.

THURSDAY, May 27.

Institution of Electrical Engineers, at 8.

FRIDAY, May 28.

Royal Institution, at 9.—The Isolation of Fluorine: Prof. H. Moissan.

Physical Society, at 5.—The Perception of Difference of Phase by the Two Ears: Dr. A. A. Gray.—The Isothermals of Isopentane: Mr. Rose-Innes.

SATURDAY, May 29.

London Geological Field Class.—Excursion to Sheerness. Drive to East Church, Hensbrook. London Clay. Leave Holborn Viaduct, 1.25.

MONDAY, May 31.

Royal Geographical Society, at 8.30.—Nupe and Ilorin (Nigeria): Lieut. Seymour Vandeleur.

TUESDAY, June 1.

Royal Institution, at 3.—The Heart and its Work: Dr. E. H. Starling.

Zoological Society, at 8.30.—On the Structure of the Skull in the Paraguayan Lepidosiren: Prof. T. W. Bridge.—On the Classification of the *Thyrididæ*, a Family of the Lepidoptera Phalænæ: Sir George F. Hampson, Bart.—On a Collection of Lepidoptera obtained at Shoa in 1894 by Mr. F. Gillett: Dr. A. G. Butler.

WEDNESDAY, June 2.

Entomological Society, at 8.

Victoria Institute, at 4.30.—Annual Meeting.—Address by Lord Kelvin.

THURSDAY, June 3.

Royal Society, at 4.—Election of Fellows.——At 4.30.—*Probable* Papers: The Sensitiveness of the Retina to Light and Colour: Captain Abney, F.R.S.—On the Mechanism by which the First Sound of the Heart is produced: Sir R. Quain, F.R.S.—Mathematical Contributions to the Theory of Evolution. On the Relative Variation and Correlation in Civilised and Uncivilised Races: Miss Alice Lee and Prof. K. Pearson, F.R.S.—An Investigation on the Variability of the Human Skeleton, with especial reference to the Naquada Race, discovered by Prof. Flinders Petrie in his Explorations in Egypt: E. Warren.—On the Brains of Two Sub-Fossil Malagasy Lemuroids: C. I. Forsyth Major.—(1) On the Dielectric Constants of certain Frozen Electrolytes, at and above the Temperature of Liquid Air; (2) On the Dielectric Constants of Pure Ice, Glycerine, Nitrobenzol, and Ethylene Dibromide, at and above the Temperature of Liquid Air: Prof. Fleming, F.R.S., and Prof. Dewar, F.R.S.—Preliminary Communication on the Nature of the Contagium of Rinderpest: A. Edington.

Linnean Society, at 8.—Observations on Termites: Dr. G. D. Haviland.—On the Genus Ramulina: Prof. T. Rupert Jones, F.R.S., and F. Chapman.

Chemical Society, at 8.—On the Thermo-chemistry of Carbohydrate Hydrolysis; On the Thermal Phenomena attending the Change in Rotatory Power of Freshly-prepared Solution of certain Carbohydrates, with some Remarks on the Cause of Multirotation: Horace J. Brown, F.R.S., and Spencer Pickering, F.R.S.—Optical Inversion of Camphor; Derivatives of Camphoric Acid. Part II. Optically Inactive Derivatives; Racemism and Pseudo-racemism: Dr. F. S. Kipping and W. T. Pope.—On some New Gold Salts of the Solanaceous Alkaloids: Dr. H. A. D. Jowett.

FRIDAY, June 4.

Royal Institution, at 9.—Signalling through Space without Wires: W. H. Preece, C.B., F.R.S.

Geologists' Association, at 8.—The Origin of the High-Level Gravel with Triassic Débris adjoining the Valley of the Upper Thames: H. J. Osborne White.

SATURDAY, June 5.

Geologists' Association—Excursion to Cheltenham and Stroud. Leave Paddington at 10.32 a.m.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

Books.—A Ride through Western Asia: Clive Bigham (Macmillan).—A Text-Book of Geology: W. J. Harrison, new edition (Blackie).—A Handbook to the Order Lepidoptera: W. F. Kirby. Vol. v. Moths, Part 3 (Allen).—Uber Verwachsungsversuche: Prof. G. Born (Leipzig, Engelmann).—Year-Book of the Scientific and Learned Societies, 14th annual issue (Griffin).—Catalogue of Tertiary Mollusca in the Department of Geology, British Museum (Natural History): G. F. Harris, Part 1 (London).—Catalogue of the Fossil Cephalopoda in the British Museum (Natural History): Dr. A. H. Foord and G. C. Crick, Part 3 (London).—The Concise Knowledge Natural History (Hutchinson).—Harrow Butterflies and Moths: J. L. Bonhote and Hon. N. C. Rothschild, Vol. 2 (Harrow, Wilbee).—L'Évolution Régressive en Biologie et en Sociologie: J. Demoor, J. Massart, and E. Vandervelde (Paris, Alcan).

Pamphlets.—Annual Report of the Geological Survey of the United Kingdom: Sir A. Geikie (Eyre).—Vergleichende Studien über das Seelenleben der Ameisen und der Höhern Thiere: E. Wasmann (Freiburg in Bresgau, Herder).

Serials.—Zeitschrift für Physikalische Chemie, xxii. Band, 4 Heft (Leipzig, Engelmann).—Geological and Natural-History Survey of Minnesota, 22nd and 23rd Annual Reports (Minneapolis).—Proceedings of the Academy of Natural Sciences of Philadelphia, 1896, Part 3 (Philadelphia.)—Maori Art, Part 1 (Wellington, N.Z.).—Good Words, June (Isbister).—Sunday Magazine, June (Isbister).—L'Anthropologie, Tome viii. No. 2 (Paris, Masson.—Essex Institute Historical Collections, Vol. xxxii. (Salem, Mass.).—Longman's Magazine, June (Longmans).

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Masefield: "Wild Bird Protection and Nesting-Boxes, &c."—**R. L.** 78
"Reports from the Laboratory of the Royal College of Physicians, Edinburgh" 78
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